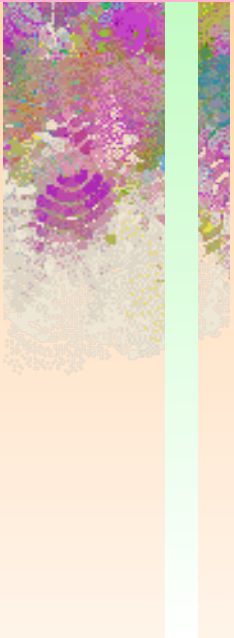




Proposed Phase I Requirements of Disinfectants/ Disinfection By-Product Rule



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Requirements

- Every CWS and NTNC that provides water that has had a disinfectant added to it will have to meet certain routine testing and reporting requirements, and will have to test for by-products at the far end of the water system.
 - Chlorine/Chloramines: TTHM and HAA5/ free and total residuals
 - Ozone: Bromate
 - Chlorine Dioxide: ClO₂ residuals and chlorite



Residual, By-Product Limits

- **Chlorine / Chloramines:** Establishes a Maximum Residual Disinfectant Level (MRDL) of 4.0 ppm
- **Chlorine Dioxide:** Establishes MRDL of 0.8 ppm and a Chlorite MCL of 1 ppm
- **Ozone:** Establishes Bromate MCL of 10 ppb
- **Total Trihalomethanes (TTHM):** Reduces MCL from 100 ppb to 80 ppb.
- **Haloacetic Acids (HAA5):** Establishes MCL of 60 ppb




Maintenance Chlorination

- By-product monitoring are not required for groundwater systems with TOC levels <2 mg/L for **ALL SOURCES**, which meet 1 of 2 requirements:
 - Use of chlorine/chloramines limited to not more than 21 consecutive days or 30 calendar days in a year **OR**
 - For a Rural Water System that uses chlorine/chloramines for not more than 30 consecutive days, or 45 cumulative calendar days in a year if the system:
 - Exceeds 100 miles of mains with at least 40% of the system consisting of 3-inch or smaller pipe **AND**
 - The system does not provide fire protection.



Definition: “Day of Disinfection”

- A day of disinfection is any portion of time between 12:00 AM and 11:59 PM that a disinfectant is being used.
- Time begins when the unit is turned on and time ends when the unit is turned off.



TTHM -- HAA5 Monitoring

- Sampling frequency depends on:
 - System size
 - System type, and
 - The results of one year of monitoring
- Based on results of routine monitoring, reduced sampling will be possible for most systems



Minimum Disinfectant Levels

- All systems using a disinfectant on a continuous basis must maintain specific minimum disinfectant levels (depending on the type of system).
- Disinfectant residuals must be at or above the required levels in at least 95% of the samples taken during any month.



Minimum Disinfection Levels: Surface Water, GWUDI Systems

- Residual measured a minimum of 5 days per week at the far end of the system.
- For systems with multiple zones, it's recommended all zones be checked a minimum of 5 days per week.
- Health & Human Services can require a PWS to monitor residuals 7 days a week for cause.
- 0.2 ppm Free chlorine or 0.5 ppm for total chlorine, or
- 0.1 ppm Free Chlorine or 0.25 ppm for total chlorine provided that certain QA/QC requirements are met, or
- HPC of < 500 cfu/ml



Minimum Disinfection Levels: Groundwater Systems

- Residual measured a minimum of 5 days per week at the far end of the system.
- For systems with multiple zones, it's recommended all zones be checked a minimum of 5 days per week.
- Health & Human Services can require a PWS to monitor residuals 7 days a week for cause.
- 0.1 ppm for free or total chlorine, or
- 0.05 ppm for free or total chlorine provided that certain QA/QC requirements are met, or
- HPC of < 500 cfu/ml



Minimum Disinfectant Levels

- The State can require any system, regardless of source, to maintain the higher residual requirements for cause.
- If a system is issued an Administrative Order which specifies disinfectant residual levels, those requirements supercede any other requirements for minimum residuals.



To Qualify for Lower Minimum Residual Levels:

- All SW and GWUDI systems must meet or exceed CT requirements at all times through the treatment process.
- All SW and GWUDI Systems must maintain turbidity readings ≤ 0.30 NTU in 95% of readings and never exceed 1 NTU (once IESWTR and LT1 are in effect).
- The field test method being used must consistently, reliably and accurately measure residuals below the specified limit.
- Systems must routinely calibrate the instruments being used and document the calibration.
- System must demonstrate that all potential interferences have been corrected for.



Penalties: Non-Compliance

- Disinfectant residuals must be at or above the required levels in at least 95% of samples taken during any month.
- If the system fails to meet this requirement in two consecutive months or in $\geq 50\%$ of the previous 12 consecutive months, then the system will be deemed to be in violation and a **Treatment Technique Violation** will be issued.



Compliance Dates:

- For SW and GWUDI systems serving 10,000 people or more — January 1, 2002
- All other systems — January 1, 2004



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